

SECTOR 4

CUBA—NORTH COAST

Plan.—This sector describes the N coast of Cuba from Cabo San Antonio, the W extremity of the island to Punta Maisi, the E end.

General Remarks

4.1 Cuba, with 44,206 square miles, is the largest island of the West Indies and the principal land area of the Greater Antilles. Between the E and W extremities of the island, there is a distance of approximately 600 miles.

Cuba's coastline of approximately 2,200 miles has an extraordinarily large number of good harbors, chief of which are the pouch-shaped or bottlenecked harbors, which have narrow entrances but commodious anchorage.

The main bays of this type are Honda, Cabanas, Mariel, La Habana, Nuevitas, Puerto Padre, Nipe, and Tanamo on the N coast, and Guantanamo, Santiago de Cuba, and Cienfuegos on the S coast. The principal open bays are Matanzas and Cardenas.

Cuba is fronted by 1,300 to 1,600 islands and islets, of which Isla de la Juventud is the largest. The terrain consists of gentle slopes and rolling land.

Mountains cover approximately a quarter of the total area and are widely spread from one end of the country to the other, with large areas of plains between the mountain concentrations.

More than 200 rivers drain the surface of Cuba. Most of these run toward the N or toward the S, dividing approximately along the axis of the island. Many of the rivers empty into wide, deep estuaries that allow navigation for a short distance from the coastline. Because of the narrow width of the island, almost all of the rivers are short. The largest is the Cauto, 155 miles in length, which runs parallel to the Sierra Maestra through the wide plain of W Oriente. Oriente presents the most rugged relief of Cuba, particularly as represented in the Sierra Maestra.

Cuba's N coast forms a gentle arc divided by natural features into three approximately equal distances. The Archipelago de Los Colorados dominates half of the first or W length, while the Archipelago de Sabana and Archipelago de Camaguey completely mark the second or middle length, which length fronts on Nicholas Channel and Old Bahama Channel. The third or E length fronts directly on the open sea and is almost completely without off-lying islands. Pocket bays are a distinctive feature of the entire coast.

Several of the major shipping routes for the Caribbean Sea, and routes for traffic bound to or from the Panama Canal pass Cuba. Santaren Channel and Nicholas Channel lead respectively from the Straits of Florida and the Gulf of Mexico, through Old Bahama Channel to Windward Passage.

Several IMO-adopted Traffic Separation Schemes have been established along the N coast of Cuba, and may best be seen on the area chart.

Navigation in the remaining Traffic Separation Schemes will be observed from control posts and from vessels. Such control posts

or vessels shall not call for any information, except in cases involving infringements by shipping within the Traffic Separation Scheme, or other types of infringements of national law.

Winds—Weather.—The principal source of climate and current conditions affecting Cuba are the more or less constant trade winds as these partake of the general North Atlantic clockwise movement circulating around the semi-permanent area of high barometric pressure alternating between the Azores and Bermuda.

The prevailing winds are NE and E from November to April, becoming mostly E with the latter month, and E and SE from May to October, becoming a little N of E with the latter.

Local variation is considerable with winds somewhat stronger in winter and with land and sea breezes commonly a function of prevailing winds.

The wind in the summer is often enough out of the S on the S coast where also it can develop into a "bayamo," a particularly violent thundersquall frequent off Golfo de Guacanayabo.

The West Indian hurricane, the principle aberration within the general forces governing the production of climate conditions within the area, develops more often than not well to the E and in latitudes of the Doldrums. It travels slowly W within the belt of the NE trade winds and with an increase in speed, generally recurves NE in about 30°N.

The season of its occurrence is in late May to early December and the directions of its track is such that it generally parallels the axis of Cuba and passes either N or S.

Hurricanes that develop in the W Caribbean proceed N and commonly pass over the W part of the island.

"Los notes" (northers) are a lesser aberration within the general climate producing forces. They originate as an escape from the continental United States of large cold air masses which, in their movement S and SE, can reach gusts of more than 60 knots. They become progressively less distinct with their passage over the higher elevations of Cuba.

The W part of Cuba has one rainy season (May to October) and one comparatively dry one (November to April). The E part has two rainy seasons (April to June and September to November or December) and comparatively dry ones (February or March and July).

Tides—Currents.—The predominant direction of the current is NW between Punta Maisi to Cayo Cruz de la Padre. In Old Bahama Channel, currents are generally weak and wind influenced. A SE set of 2.7 knots has been experienced with a force 4 NW wind.

A strong inshore set towards the Cuban coast may be experienced between Punta Maisi and Old Bahama Channel.

The current in Nicolas Channel is usually weak and has a W set.

Currents normally set E along the NW coast of Cuba, while a set towards the reefs may be experienced off the Archipelago de los Colorados.

The tidal currents normally set on and off the banks at rates of about 0.5 knot, though in the narrow channels between the

cays, they sometimes attain rates of 2 to 3 knots. Within the cays, tidal currents are weak.

Pilotage.—Pilotage is compulsory for all foreign vessels. The vessel should send its ETA to Mambisas Habana. An ETA message addressed to Mambisas (name of port) should also be sent, if the vessel's first port of call is not Habana.

Regulations.—Anchoring or stopping is prohibited within Cuban territorial waters between positions 23°14.2'N, 80°21.8'W and 23°05.6'N, 82°29.4'W.

The dumping of all types of rubbish from ships in Cuban waters is prohibited.

Signals.—Vessels must establish communications with the port signal station either by VHF channel 16, or visual signals to announce their presence, nationality, and characteristics.

Caution.—An area in which navigation has been prohibited has been established between an area bounded by the coastline to the SE and between a position 5 miles NW of **Cayo Piedras del Norte Light** (23°15′N., 81°07′W.), to a position 2.5 miles NNW of **Punta Maya Light** (23°06′N., 81°29′W.).

Numerous reports indicate that many of the lights and other navigational aids along the coast of Cuba are unreliable.

Offshore Passages

4.2 Yucatan Channel (21°30'N., 86°00'W.), about 108 miles wide between Cabo San Antonio and Isla Contoy, serves as a main route between the Gulf of Mexico and the Panama Canal. The E side of the channel is deep, shoaling gradually to the Mexican coast.

Depths of less than 30m and named dangers extend up to 25 miles off the coast, while depths of 15m and 17m have been reported to lie 34 miles NNE and NE, respectively, of **Isla Contoy** (21°29'N., 86°48'W.).

Tides—Currents.—The greater part of the flow from the Caribbean Sea flows through the Yucatan Channel towards the Gulf of Mexico. The western boundary of the current is Banco de Campeche, the bank extending 120 to 145 miles N and W of the Yucatan Peninsula. The E boundary lies about 20 miles off Cabo San Antonio, Cuba.

The current axis is located about 35 miles off the Yucatan coast, about 6 miles beyond the 300m curve, in depths of 366 to 731m. The mean rate during April, May, and June along the axis is about 4 knots.

Twenty to thirty-five miles from Cabo San Antonio, the mean rate is 1 knot at 50 miles, 2 knots at 65 miles, 3 knots at 78 miles, and at 90 miles, or about 25 miles from Yucatan, 1 knot.

The current set across the width of the channel is northerly. In summer, mean rates increase, while in winter the rates decrease little. The current boundaries contract when the rates decrease, and expand with a rate increase.

Apart from the seasonal variation, there is a noticeable daily variation which is more apparent on the W side. The mean rates given above occur about 9 hours before the moon's upper transit, but rapid rate changes may occur.

On one occasion the rate increased by 3 knots in 5 hours, and decreased to the original value in 9 hours. On another occasion it increased by 3.2 knots in 5 hours.

Some N sets slightly in excess of 5 knots have been experienced in the channel, and in a N to NW direction within the Gulf of Mexico as far N as 23°N.

Within 20 miles of Cabo San Antonio, the sets are either NE toward the Straits of Florida, or SE then E along the S coast of Cuba. At times the E current running from Cabo San Antonio towards Cabo Corrientes may attain rates of 4 knots during S winds, and is dangerous to navigation. On the W side of the channel, inshore of the current's W limit, currents are variable and wind-dependent.

Directions.—During S winds, it is advisable to avoid the coast of Cuba from Cabo San Antonio to Cabo Corrientes, due to dangerous currents.

Vessels not intending to use the Traffic Separation Scheme off Cabo San Antonio should avoid it by as wide a margin as is practicable.

A description of the E coast of Mexico may be found in Pub. 148, Sailing Directions (Enroute) Caribbean Sea, Volume II.

Cabo San Antonio to Punta Hicacos

4.3 Cabo San Antonio (21°52'N., 84°57'W.), the W extremity of Cuba, is low and covered with trees from 21 to 24m high, which become visible before the land, frequently having the appearance of vessels under sail.

The curve of the coast is so gradual that the position of the cape can only be identified by the lighthouse. The general area is reported radar conspicuous at 15 miles.

The shore is fronted by a shoal water coastal limit that, rising steep-to seaward, opens up as it progresses N from the less than 1 mile stretch abreast Cabo San Antonio.

Currents near the outer edge of the bank are confused, while tidal currents closer inshore set N on a rising tide and S on a falling tide at a velocity of about 0.5 knot. Tide rips are also present.

Temporary anchorage is available S of the lighthouse, with the SE extremity of the land bearing 135°, and the W extremity 023°.

Traffic Separation Scheme.—An IMO-adopted Traffic Separation Scheme has been established off Cabo San Antonio. Additionally, the area between the E separation lane and the coast has been designated an Inshore Traffic Zone. Vessels not utilizing the scheme are advised to avoid it by as wide a margin as is possible.

The coastline between Cabo San Antonio and Punta Hicacos, about 229 miles ENE, could be described as a gentle curve where the first half of its length forms many inlets, the entrances of which are quite wide.

The second half of this coastline forms a regular series of somewhat larger pocket inlets or bays of which the entrance is characteristically the narrowest part.

Bahia Honda, midway along the coastline, is the farthest W of these pocket bays, while Bahia de La Habana is well known.

The Archipelago los Colorados fronts about 100 miles of coastline from Golfo de Guanahacabibes to Bahia Honda and consists of a largely uninterrupted series of sunken dangers which, gradually closing the coast from SW to NE, rise steepto seaward while enclosing landward a shoal water coastal margin scattered with more sunken dangers and numerous lowlying islets.

Several channels, available to small vessels with local knowledge, lead in through these dangers to a number of minor communities. The outer sunken dangers are seldom marked by breakers except during heavy weather and they are difficult to distinguish.

The shore beyond these dangers is so low and at such a distance from deep water, that vessels should use extreme caution in making their approach. In contrast to this particular coastline, the coast generally is clear and steep-to beyond the Archipelago los Colorados and as far as Punta Hicacos.

From Golfo de Guanahacabibes to Puerto de Cabanas, there is an uninterrupted range of hills and isolated peaks whose shapes are distinctive and that stretch out for 80 miles. Farther along the coast, particularly between Bahia Honda and Bahia de Matanzas, a number of natural landmarks point up the various inlets that may be of interest to ocean shipping.

4.4 Golfo de Guanahacabibes (22°08'N., 84°35'W.), close NE of Cabo San Antonio, a spacious open bay extends E through Ensenada de Guadiana to the Rio Guadiana, and N some 40 miles to the low-lying but quite swampy islet of Cayo Buenavista. It has general depths of over 7.3m aside from the fringing reef to seaward.

The Golfo de Guanahacabibes is much encumbered with shoals and cays. The intricate nature of the channels through the reef makes local knowledge or pilotage essential.

The aspect of the surrounding shore is low, largely forested or scrub-covered flat land.

Banco de Sancho Pardo, the SW extremity of Archipelago de los Colorados, is a narrow ridge of above and below-water rocks and other sunken dangers. It confines the greater part of Golfo de Guanahacabibes to the NW and restricts the principal entrance into the bight to a 15 mile wide expanse of comparatively unencumbered water between Las Calabazas, the charted SW extremity of the ridge, and Punta Cajon.

Banco de San Antonio (San Antonio Knoll), close seaward of the entrance to the bight, is about 8 miles NW of Punta Cajon. It is a small, steep-to coral bank with least depths of 18m, occasionally marked by short, choppy sea, resembling rip tides. In clear weather, it can be distinguished by a discoloration of the water above it. Patches, with depths of 3.6 to 5.8m, lie about 5 miles ESE and about 7 miles E of Banco de San Antonio.

Vessels with local knowledge and drawing no more than 6.1m can enter Golfo de Guanahacabibes so as to pass about midway between Punta Cajon and Bajos Las Calabazas, taking precautions to avoid Banco de Pizarro.

This bank, located about 8 miles NE of Punta Cajon, has depths of 3.4 to 4.8m.

Fondeadero Los Arroyos (Arroyos Anchorage) (22°22'N., 84°26'W.), in Golfo de Guanahacabibes extreme NE part, has anchorage as charted with good holding ground and shelter from predominating winds. It is near a fishing port.

There is a wharf at La Fe (22°03'N., 84°16'W.) in poor condition. La Fe is a small fishing village on the E bank of the Rio Guadiana having limited facilities for the berthing alongside of shallow-draft small craft. The port is approached via Bahia Guadiana and a channel marked by a safe water buoy in Ensenada Juan Lopez. Local knowledge or a pilot is

essential. A aero radiobeacon is located 5 miles NE of the port of La Fe.

Elsewhere within Golfo de Guanahacabibes, the holding ground continues good, but hard patches of coral lie scattered about a bottom of widespread mud, coral sand. Currents are weak and dependent on the wind.

From Golfo de Guanahacabibes to Bahia Santa Lucia, the reef is marked by many light towers.

Traffic Separation Scheme.—An IMO-adopted Traffic Scheme has been established off the Archipelago Los Colorados in the vicinity of La Tabla Light and Banco Sancho Pardo, and may best be seen on the area chart. An Inshore Traffic Zone has also been established, shoreward of the inshore Traffic Separation Lane.

Vessels not using a Traffic Separation Scheme should avoid it by as wide a margin as is practicable.

4.5 Bahia Santa Lucia (22°42'N., 83°58'W.) is a largely shoal water bay lying between the small island of Punta Jutias and the mainland point of Punta Tingo, about 5 miles to the E. The bay is located about 73 miles NE of Cabo San Antonio.

It is fronted by fields of mangroves and a low-lying terrain that rises gradually to hills in the interior. Seaward of the bay, there is a barrier of above and below-water dangers that lie approximately ENE of Punta Jutias, within a distance of 2.2 miles.

In the midst of these seaward dangers, there is a conspicuous thickly vegetated islet, Cayo Restinga del Palo. Pasa Honda is the passage into the bay, via a buoyed channel, through the reefs 2.5 miles NE of the light on Punta Jutias.

Bahia Santa Lucia is a jurisdictional adjunct to the harbor administration for Bahia de Mariel, the bay about 72 miles to the ENE. Vessels call here to load ore via lighter by daylight.

Pilotage.—Pilotage is compulsory. Pilots are arranged through Mariel with advance notice and will board off Pasa Honda. The channel is navigated during daylight hours only.

Directions.—Entrance to the onshore port facilities and the smaller anchorages is through the Pasa Honda Channel, which has a width of 200m and a least depth over the bar of 5.2m.

The channel is marked by lighted buoys and contains two bends with dangerous narrows. The channel to the light wharf is 50m wide with a least depth of 4.9m.

Anchorage.—There are three designated anchorage berths for loading copper mineral and for the discharge of sulfur in bulk.

Anchorage No. 1 (Fondadero Poza Santa Lucia) has a length of 140m with a draft of 4.7m. Anchorage No. 2 (Fondadero El Quebrado) has a length of 140m with a draft of 5.5m. Anchorage No. 3 (Fondadero Exterior) has an unlimited length with a draft of 10.9m.

The Patricio Lumumba Pier, reported to be in bad condition, has a length of 85m with a depth alongside of 4.7m. One tug is available.

4.6 Santa Lucia (22°40'N., 83°58'W.) (World Port Index No. 10050), at the head of Bahia de Santa Lucia, is a sub-port of Puerto del Mariel. Santa Lucia is a small community with lightering facilities occasionally used for transshipment of copper ore to vessels at anchor offshore.

There is a sulfuric acid factory and transshipment dock.

The channel to Santa Lucia, marked by lighted beacons, was dredged to 4.5m in 1997.

Two tugs available at this port. Only by arrangement is fresh water accessible.

La Esperanza (22°47'N., 83°44'W.) is a port for small craft. It is approached through a channel, marked by stakes, passing along a break in the reef 5 miles N of the port. Local knowledge is required.

Aspect.—The coastline between Bahia de Santa Lucia and Bahia Honda, which is about 46 miles ENE, is rather irregular and to a considerable extent is confused by a narrow, uninterrupted tangle of mangroves that form a perimeter along a low-lying coastal plain.

Offshore, a shoal water coastal rim having numerous lowlying islets and many sunken dangers impedes all but small vessels with local knowledge from making their destination to several communities lying along the shore.

One of the communities is Niagara, about midway along this 46 mile stretch, identified by a tall white conspicuous chimney standing at a nearby sugar mill.

Bahia Honda, about 120 miles NE of Cabo San Antonio, is a significant pocket bay, entered by way of a narrow, comparatively deep water channel which, leading through a coastal edge of coral reefs, proceeds almost directly to several well-sheltered anchorages and alongside berthing facilities lying at a distance of not more than 2 miles from the open sea.

The surrounding terrain is largely flat and has a scattering of low-lying to rolling hills that gradually slope upward and meet the higher hills and more rugged land of the interior.

El Pan de Guajaibon (22°47'N., 83°22'W.) is one of these higher interior hills lying 13 miles SW of the town of Bahia Honda. It has a conspicuous 692m saddle-shaped summit, and is a landmark in identifying the bay from the open sea. Also, conspicuous is Punta Gobernadora Lighthouse, 3 miles W of the bay.

4.7 Bahia Honda (22°58'N., 83°10'W.) (World Port Index No. 10070) is a jurisdictional adjunct to the harbor administration for Bahia del Mariel, the bay about 23 miles to the E. Vessels assigned to load at Bahia Honda do not have to enter Mariel for clearance, but must pick up the pilot at the Mariel port entrance. Pilotage is compulsory. Tidal currents are negligible and do not impede navigation through the entrance channel.

The entrance channel has a rather sandy type bottom by the E side and a rocky bottom by the W side. The channel is approximately 150m wide. The maximum draft at LW at the entrance or on the bar is 8.5m, with a maximum length of 147m.

Vessels enter or leave during daylight only. Tugs are not needed for entry operations. The Ciro Redondo Berth (Darsena de Buenavista) situated near Punta Caiman on the W side of the entrance channel, has a length of 130m with a draft, of 6.7m. This berth is used as a base for the dismantling of vessels and loading scrap iron.

The Central Harlem Dock located at Punta Gerardo on the SW side of the bay, will accept vessels with a maximum length of 137m, and a maximum draft of 5.7m.

The Central Harlem Dock is presently out of service. Bunkers are not available.

Fondeadero Corojal (22°57'N., 83°11'W.) is the principal deep-water anchorage within Bahia Honda, lying midway between Punta Caiman and Punta Gerardo. Vessels anchor in 10.7m, soft sticky mud, in a charted position with Punta Difuntos range beacon on Cayo del Muerto bearing 073°, distant about 0.7 mile.

Vessels loading at the Punta Gerardo transshipment terminal for the Central Harlem sugar mill may shift to the anchorage in order to load to deep draft.

Aspect.—Punta Caiman, on the W side of Bahia Honda entrance channel, is the site of an artificial basin dredged inland through soft coral and limestone and intended for the loading of pyrites.

The sides of the basin rise steep-to without any bulkhead facing so that vessels are usually backed in on an anchor and moored midway between off-lying pilings and dolphins.

Vessels enter and are moored generally just before sunset, when light winds are out of the NE thru E to SE.

Directions.—From a position about 2 miles NNW of the channel, proceed on the entrance range on a heading of 183° through the narrow entrance channel.

At times when the rear beacon is not visible from the sea, vessels steer for the front beacon and mark the limits of the channel by means of a distinct color difference between the deep water of the fairway and the shallow water of its lateral confines.

When about 0.8 mile from Punta Difuntos beacon, they ease to starboard and, steering a SSW course, proceed either to the Corojal Anchorage or the Punta Gerardo alongside berthing facility.

If proceeding to the latter berth, steer so as to pass close E of Bajo Tres Patas, a steep-to, hard and rocky shoal water patch lying about midway between Fondeadero Corojal and the entrance to the dredged channel leading to Punta Gerardo.

4.8 Puerto de Cabanas, situated about 10 miles E of Bahia Honda, is an excellent harbor divided into two landlocked bays having a common entrance from the sea. The surrounding terrain is quite hilly and rises to a ridge of higher hills.

It is reported (1995) that it is a prohibited zone and special permission is needed to enter.

Loma del Rubi (Pan de Cabanas) (22°53'N., 82°57'W.) serves as conspicuous landmark, particularly its E side, in identifying Puerto de Cabanas from sea.

The W side of the hill, rising to 428m, is not as easy to identify because of the clutter of the hills behind it, but from a closer view, a remarkable notch stands out and becomes a valuable landmark in the transit of Puerto de Cabanas entrance channel.

Peninsula Juan Tomas, which divides Puerto de Cabanas into W and E parts, is a low-lying peninsula that extends well into the common seaward entrance and thereby creates the bifurcation channels Canal Orozco, leading into the W part, and Canal Cabanas, leading into the E.

Fuerte Reina Amalia stands in ruins on the N extremity of the peninsula and serves as a conspicuous landmark when approaching these channels from sea.

4.9 Cabanas (23°00'N., 82°58'W.) (World Port Index No. 10080) is the local administrative center for harbor and

shipping activities carried on within Bahia Orozco and Bahia Cabanas.

This port, as with Santa Lucia and Bahia Honda, is a subport of Mariel, the bay 12 miles to the E. Pilotage is compulsory, with the pilot boarding off the entrance to Bahia del Mariel. Transiting to Puerto de Cabanas is recommended during daylight hours only. Entering Mariel for clearance is not required before proceeding to Cabanas.

Tidal currents in the entrance have a flow of about 1.5 knots during the ebb, with a somewhat stronger out flow during the rainy season, but generally currents present no difficulty and vessels need not await slack water to enter.

A bulk sugar pier within the bay will accept a vessel with a maximum draft of 5.7m and a maximum length of 137m.

4.10 Bahia del Mariel (23°01'N., 82°45'W.), about 12 miles E of Puerto de Cabanas, is well-sheltered and another typical pocket bay along this part of the coast.

The bay, accessible by means of a narrowed entrance channel leading into an unencumbered deep-water basin, provides a straightway approach to several alongside berthing facilities for ocean vessels.

The terrain embracing this area is generally low-lying on all sides except on the E side of the bay, where hills slope steeply upward, directly from the water's edge.

The W face of these hills has been quarried into a conspicuous white cliff.

Mesa del Mariel is an outstanding landmark about 8 miles ENE of the entrance to Bahia del Mariel. This is a high elongated plateau possessing a distinctive terrace at its E extremity and a remarkable steep slope at its W extremity. It was reported to be radar conspicuous.

The E side of the bay is marked by several tall chimneys of a cement works. With good visibility, these chimneys are visible some 12 miles at sea and the light-colored smoke forming a dense distinctive cloud from the cement works can be sighted for a distance of 25 miles.

The Cuban Naval Academy, a large group of white buildings, is located on the SE side of the bay standing on slopes behind the Mariel community. The Naval Academy serves as a very good landmark for the seaward approach to Bahia del Mariel entrance channel. A signal station is located at Punta del Torreon on the E side of the entrance channel.

Mariel (22'59'N., 82'45'W.)

World Port Index No. 10090

4.11 Mariel is a port with considerable commercial importance, particularly with cement and sugar cargoes.

Winds—Weather.—See the beginning of this sector.

Tides—Currents.—Mean High Water Springs rise 0.5m, while MHWN rise 0.3m. A W set, at a rate of 1 knot has been reported in the channel entrance extending up to 4 miles offshore.

Depths—Limitations.—The entrance channel is approximately 60m wide at its narrowest point and allows for a maximum draft of 9.4m for vessels up to 178m in length. Vessels between 178m and 202m in length can have a

maximum draft of 7m. Vessels can enter and depart day and night.

The operations at Mariel are all located on the E coast of the bay.

Berth	Maximum vessel length	Maximum vessel draft
Sugar Bulk Terminal	178m	8.5m (bow) 9.1m (stern)
Andes Gonzales Lines Dock	170m	8.5m
Rene Arcay Cement Factory Pier (North Side)	109m	7.9m
Rene Arcay Cement Factory Pier (South Side)	out of	service
Osvaldo Padron Pier (West Side)	170m	8.5m
Osvaldo Padron Pier (East Side)	140m to 170m < 140m	8.2m (bow) 7.6m (stern) 7.9m
General Cargo Pier (two berths at Osvaldo Padron Pier)	170m	8.5m

Pilotage.—Pilotage is compulsory. The pilot boards the vessel 1 mile N of Buoy No. 1 which marks the port entrance, around the clock, or off La Habana, by prior arrangement. Pilots for Cabanas, Santa Lucia, and Bahia Honda may be boarded off the port of Mariel. The harbor pilot, call sign "Mariel Practico,s" may be contacted by VHF channels 13 or 16.

Regulations.—See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean, Baltic Sea, North Sea, and the Mediterranean Sea for details on regulations pertaining to vessels in Cuban waters.

Mariel is a quarantine port for Habana. A large quarantine station is located on the same point, Punta Regla, as the harbor channel front range light.

Navigation by civilian vessels is prohibited in Ensenada de Lazo and along the S side of the Peninsula Agosta.

Anchorage.—There are three available anchorages. The first, Mujica, is charted 0.2 miles NNW of the pier at Punta Mujica. This location offers good holding ground in 11m, mud bottom. The second area is found 0.4 mile SE of Punta Gorda in 9m, mud, with good holding ground. The final area is located 0.5 mile SSW of Punta Gorda . This anchorage offers good holding ground in 8.5m, mud bottom.

Directions.—By day, the center of the Naval Academy, in alignment with a large white tower on the bay's entrance point, leads from seaward. Range beacons, which may be seen on the area chart, mark the entrance channel.

4.12 Between Bahia del Mariel and the entrance to Bahia de La Habana, about 25 miles ENE, the coastline is interrupted

at regular intervals by a series of small inlets serving for the most part, as estuaries to a number of small coastal streams.

Boca Del Rio Banes (23°02'N., 82°38'W.), 6.5 miles E of Bahia del Mariel, is a short, somewhat confined, unencumbered inlet where on its E shore, there is a small facility where sugar is loaded into lighters alongside a finger pier.

Bahia de La Chorrera (23°08'N., 82°25'W.) opens about 3 miles W of the entrance to Bahia de La Habana. The Rio Almendares flows into this inlet. The coast in the vicinity is low, ragged and the blackened coral of which it is composed, is honeycombed by the sea. A light marks the river mouth.

The bay affords anchorage for small vessels with local knowledge, in depths of from 6.1 to 9.1m, coral sand, in a position having limited swinging room just within the entrance to the inlet. With winds from the NE and NW through N, the anchorage will be affected by a strong sea.

It is reported (1995) that it is a prohibited zone.

La Habana (Havana) (23°08'N., 82°20'W.)

World Port Index No. 10100

4.13 Bahia de La Habana, about 164 miles ENE of Cabo San Antonio, is one of the largest sugar shipping ports in the world. Sugar remains the mainstay of the economy in Cuba. Habana is the railroad center of the island and is acknowledged as the principal shipping center for the island.

Bahia de La Habana is a natural landlocked harbor, sheltered, quite deep, and entered through a narrow channel, straightway from the open sea.

Depths—Limitations.—The entrance channel has a mud bottom. A tunnel traverses the entrance channel as best seen on the chart. Several submarine cables emanate from the W side of the entrance below Castillo de la Punta. Four additional submarine cables are charted between the entrance and Castillo de la Fuerza.

A strong NE/SW current of as much as 2 knots has been observed across the harbor entrance.

The maximum draft throughout the bay (except the refinery quay), is 12.8m at LW. Tankers may enter drawing up to 11.4m as they take a special range line course once they are in the bay.

The port can be entered or sailed from, day or night. It is not necessary to wait for slack or a favorable tide, except tankers with an 11.2m draft which can enter only at HW. A 16.4m submerged wreck lies about 0.15 mile WSW of Castillo del Morro, just outside the mouth of the entrance channel. An 8.9m rock lies on the E side of the channel, about 0.2 mile inside the entrance, and 2 rocks, 10.6m and 10.8m, lie on the W side of the channel about 0.3 mile inside the entrance.

The harbor offers a total of 41 berths for a variety of cargoes. Vessels are urged to contact the local authorities for the latest information on harbor and berth depths before planning a voyage here.

Muelle Andreas Gonzales Lines, on the NE side of the channel and about 0.7 mile SE of Castillo del Morro, is a bulk fertilizer and coal terminal, 332m in length, with alongside depths of 4.6 to 9.4m.

Sierra Maestra Terminal is a complex on the W side of the harbor, consisting of three general cargo piers, with a total of six berths, offering depths of 8.2 to 9.7m.

Margarito Iglesias Terminal, just S of Sierra Maestra Terminal, also has three piers. Piers 1 and 2 have depths of 6.1m alongside, but pier 3 has depths of 5.4m.

Habana Central Terminal lies S of Margarito Iglesias Terminal. The N side of the pier has depths of 7.9 to 9.4m, while the S side offers depths of 5.7 to 9.7m. It is forbidden to dock vessels over 100m long when there are vessels docked at the S side of Margarito Iglesias Pier 3, unless those vessels do not exceed 80m in length.

Aracelio Iglesias Jetty is used in the discharge and loading of general cargo, consists of a dock and a pier. The dock is 174.6m long and 13.4m wide, and depths alongside range from 6.7 to 8.5m. The pier N of the basin offers depths of 8.2m (base) to 10m (head).

Manuel Diaz Marine Terminal consists of two docks and one pier, offering depths of 6.1 to 10.3m.

Tallapiedra Dock has a least depth of 4.5m and caters to lighter vessels.

Antonio Guiteras Dock, used for heavy lift cargoes, offers alongside depths of 3.3 to 7.9m.

Osvaldo Sanchez Docks, used for lumber discharge, consists of docks with depths of 3.6 to 7.3m.

Haiphong Terminal, on Cayo Cruz, consists of five berths, No. 4 being used mainly for docking and operating ro-ro vessels. Cargoes handled include general cargo, lumber, structural steel, steel scrap, transport, etc. The terminal has alongside depths of 9.7 to 10.6m, but it has been reported (1997) that shoaling alongside limits vessels to a maximum draft of 8.5m.

Manuel Porta Pena Dock, on the W side of Ensenada de Guasabacoa, is suitable for loading and discharging general cargo, lumber, and refrigerated cargoes. There are also installations for the discharge of used lubricating oil and petroleum products. Berth No. 1 is 140m long with a draft of 7.6m. Berth No. 2 is 165m with a draft of 9.3m.

Quinto de Regla Pier, used for bulk sugar cargoes, offers three berths with alongside depths of 5.1 to 8.5m.

Fressler Pier, catering to vessels loading bulk molasses, offers depths of 6.7 to 9.1m.

Edifico Docks, dealing in bulk fertilizer and molasses, offers alongside depths of 4.2 to 6.7m.

Facilidades Maritimas Wharf can accommodate vessels up to 185m long, with a maximum draft of 8.5m. The dock is used chiefly for the loading of molasses and the discharge of tallow and chemical products. It has a length of 248m with a width of 7.9m.

Nicolo Lopez Oil Terminal is used exclusively for the discharge of crude oil and petroleum by-products. The S side of Jetty No. 1 has a max. length of 250m and a max. draft of 11.5m. The N side of Jetty No. 1 has a max. length of 186m and a max. draft 10.3m. Jetty No. 2 offers alongside depths of 10 to 11.5m.

Aspect.—The port is entered with Castillo del Morro to the E and Castillo de la Punta to the W. From seaward, the difference between the topographical features E and W of the harbor assist in identifying the entrance. The land E of Castillo

del Morro is about 60m and flat, but 19 miles E is the prominent ridge, named Sierras de Jaruco.

At about the same distance W is an unmistakable notch or gradation in the E end of Mesa de Mariel, a long flat ridge of moderate elevation.

There are a multitude of imposing structures constituting the metropolis of La Habana. Hill of the Jesuits, rising in La Habana, is flanked on its N side by a conspicuous 67m high monument visible seaward during clear weather at a distance of better than 20 miles.

Castillo del Morro, an old fortification on the N side of the seaward end of the entrance to the bay, is the site of the Castillo del Morro Lighthouse, the principal lighted navigation aid for Bahia de La Habana. The loom of the lights of the metropolis itself is reported visible on a clear night at 25 miles.

Pilotage.—Pilotage is compulsory for all foreign vessels. See also the General Remarks topic at the beginning of the sector. The pilot boards about 1 mile NW of the harbor entrance. Contact the pilot on VHF channels 13 or 16.

Regulations.—Vessels should contact the signal station at Castillo del Morro prior to entry into port.

Speed in the harbor is restricted to as slow as consistent with safety, but, in no case may exceed 6 knots.

Terminal Sierra Maestra should be given as wide a berth as practicable to avoid wash damage to the terminal.

Anchoring or trailing anchor in the entrance channel is prohibited.

Vessels in quarantine should proceed to Mariel, about 23 miles W of Habana.

Signals.—See also the Signals topic at the beginning of this sector.

The pilot station, call sign "Habana Practicos," may be contacted on VHF channels 13 and 16. The port signal station, located at Castillo del Morro and answering to "Morro Habana," may be contacted on VHF channels 13, 16, and 68. The port authorities, call sign "Habana Capitania," may be reached on VHF channels 16 and 68. The container terminal, call sign "Terminales Contenedores," operates on VHF channels 16 and 74.

Visual signals are exhibited from the signal station at Castillo del Morro.

Special storm signals are displayed from Castillo de Morro during the hurricane season. A red flag with a black center is the appropriate signal indicating the approach of inclement weather. At this signal, vessels should double up with extra mooring lines.

Anchorage.—Anchorage outside the harbor, charted at Fondadero del Morro, is not recommended, due to the presence of submarine cables and poor holding ground. Anchorage is available at Fondadero La Trasajera in the central part of the harbor as shown on the chart. The anchorage offers hard mud, good holding ground in 11 to 12m of water. Additional anchorage is available in the E part of the harbor at Fondadero Gallinero as charted.

Caution.—Occasionally, powerful lights are displayed from the dome of the capitol in La Habana. When visible well seaward, these lights with their intensity may confuse the mariner with Castillo del Morro Light.

Silting has caused less than charted depths in the bay, more specifically in the N part and on the W side in the vicinity of the finger piers.

An occasional heavy swell, induced by a strong NW wind, and a dangerous surge caused by large vessels using excessive speed entering the bay, have damaged vessels berthed at facilities near the inner end of the entrance channel.

The water within Bahia de La Habana is full of marine growth and is badly polluted, consequently ship condensers can be seriously damaged.

4.14 Between Bahia de La Habana and Bahia de Matanzas, another of Cuba's more important ports, the coastline (48 miles) closely approximates the parallel of 23°10'N. The coast is broken by regularly spaced inlets which, being quite small and shoal, serve as estuaries to a number of minor coastal streams.

The terrain close inland is largely low-lying as far as Santa Cruz del Norte and then rises relatively high with a scattering of conspicuous headlands rising abruptly from the shore.

Santa Cruz del Norte (23°09'N., 81°55'W.) is situated about 24 miles E of Bahia de La Habana. It is only a small community of no particular interest to shipping, but in helping to identify the area, there is a distillery having a tall chimney, and two storage tanks seen clearly from sea.

Central Hershey sugar mill, 2 miles to the SW of Santa Cruz del Norte, has three tall chimneys that stand on an elevation 118m high and provide an excellent landmark from sea.

This is most evident between January and June when the sugar mill is usually brightly lighted for its nighttime operation. Lights are located along this stretch of coast 0.7 mile W of the mouth of the Rio Canasi and at Punta Seboruco 4 miles W of the approach to Bahia de Matanzas.

4.15 Bahia de Matanzas (Puerto de Matanzas) (23°04'N., 81°31'W.) ranks among the largest on the N coast of Cuba and unlike other inlets or typical pocket bays, the entrance, between the low-lying point of Punta de la Maya and the low steep-to cliffs of the shore 2.7 miles to the W near Punta Sabanilla, is its widest part while the greater portion of this area is characterized by depths of over 200m.

The shore is largely steep-to, clear of off-lying sunken dangers, and there is also a remarkable uninterrupted formation of a low-lying facing of rock.

The terrain surrounding the area just described is rather flat except for its W part which then falls away abruptly into the landlocked Valle de Yumuri, a valley renowned as one of the most picturesque in Cuba.

Loma El Pan de Matanzas (23°02'N., 81°42'W.) lies 7 miles W of the head of Bahia de Mantanzas and represents a prominent landmark.

It is a ridge, 390m high, which from the NE, appears as an isolated rounded mountain and from the NW, as three hummocks of which the middle one rises above the others.

Tetas de Camarioca (23°00'N., 81°19'W.) is prominent, consisting of several high and conspicuous summits rising above the flat terrain around it.

Two aeronautical lights, shown from the high ground on the W side of Bahia de Matanzas, are visible for a distance of 35 miles.

Matanzas (23°03'N., 81°35'W.)

World Port Index No. 10110

4.16 Matanzas is a tourist center and significant sugar exporting community, which together with its suburbs Versalles and Pueblo Nuevo, lies at the head of Bahia de Matanzas. The harbor area adjacent has a free trade zone at San Severino Castle.

Winds—Weather.—Winds are commonly out of the NE except on occasion when for a brief period (one or two days) they initially blow as a fresh land breeze from the SW and then veer slowly with a diminishing force to the NW before reappearing out of the NE.

A fresh NE breeze drives a rather heavy swell into the inlet while N winds, common between September and January, tend largely to interrupt the appearance of any land breeze.

Tides—Currents.—The currents within the inlet are very slight, and caused only by the fresh water discharge from the several small rivers.

Depths—Limitations.—Bajo Nuevo, a shoal with a depth of 3.2m, and Bajo La Laja, with a depth of 2m, are two sunken dangers of rock and small stones which, lying offshore near the head of Bahia de Matanzas, partly define the seaward side of a small basin or anchorage area having its shoreward side encumbered by the shoal water coastal bank filling the head of the inlet. La Laja is a buoyed shoal, 137m by 320m. Bajo Nuevo is also buoyed.

Several deep-water passages lead in from the sea around and between these rocky dangers.

The port, situated at the mouths of the River Yumuri and the River San Juan, is formed by the inlet 5 miles long and 3.5 miles wide. There is deep water up to 122m from the shore; depth in the fairway is over 200m.

There are five separate berthing installations located on the NW shore bay.

Espignon Jose Antonio Echeverria Pier (Jesus Menendez Pier) has a length of 242m with a depth of 8.5m. Presently, no operations are performed at this pier due to the bad conditions of its dolphins.

Frank Pais Pier has two sides, but only the SW side is used. The NE side is out of service. The pier length is 162m with a draft of 6.4m. Cargo handled includes discharge of fuel and diesel oil, gasoline, and kerosene.

Terminal Maritima Reynold Garcia, on its N side, has a length of 170m with a draft of 10.4m. Cargo handled includes the import of dry cargo and export of bagged refined sugar. The S side has a length of 212m with a draft of 11.5m. Cargo handled includes the export of bulk raw sugar, dextrana, and rayon.

Espignon Juan A. Bayona Pier has a length of 180m with a depth of 11m. At this installation, tanker vessels berth to two solid dolphins and a mooring buoy. Cargo handled includes the export of molasses and alcohol.

Jose Luis Dubrocq Pier has two berths. Berth No. 1 has a length of 160m with a draft of 9.0m. Cargo handled includes import of general cargo, bulk fertilizers, bagged cargoes, lumber, and export of general cargo. Berth No. 2 has a length of 152m with a draft of 9.0m. Cargoes handled are similar to No. 1 Berth.

Pilotage.—Pilotage is compulsory and should be ordered at least 24 hours in advance. See the General Remarks section at the beginning of this sector.

The pilots, call sign "Matanzas Practicos," may be contacted on VHF channels 13 or 16. The boarding ground is located 1.5 miles W of Punta de la Maya. During bad weather the charted pilot station near Terminal Reynolds Garcia may be used.

Anchorage.— Four separate anchorage areas are charted. Fondadero del Norte has good holding ground in 11m, mud bottom. Fondadero del Medio, W of Bajo La Laja, has depths of 8 to 12m. Fondadero del Sur provides good holding ground in 7 to 12m. Fondadero del Indio provides close in anchorage to small vessels in 4.9m. All of these anchorages can utilize Castillo San Severino 23°03.6'N., 81°33.5'W.) as a reference.

Directions.—Vessels destined for the anchorages just mentioned and the berthing facilities within this bay, usually proceed through the middle of the outer part of the inlet and then steer according to destination.

Punta Hicacos to Puerto de Nuevitas and Old Bahama Channel

4.17 An IMO-adopted Traffic Separation Scheme has been established off this coast, and may best be seen on the chart. See also the General Remarks section at the beginning of this sector.

Punta Frances (Punta Icacos) (23°12'N., 81°09'W.), the N extremity of the Peninsula de Hicacos, is low and sandy but can be identified by the buildings of a salt works near it. Punta de Molas, its E extremity, is low-lying.

The whole length of the seaward side of the peninsula has a fine beach and is broken only in a few places by low cliffs; the highest and most prominent of these, situated 4.5 miles SW of Punta Frances, is named Bernardino.

Varadero (23°08'N., 81°19'W.) is Cuba's biggest tourist development, and is situated on a low part of the peninsula near its junction with the coast, 7.5 miles SW of Punta Frances. An aero radiobeacon is located 4 miles SW of Vardero.

From seaward, this community is identified with numerous hotels. At night, the lights of this resort area are conspicuous.

Caution.—A restricted area, best seen on the chart, which is prohibited to all tankers, dry cargo vessels and vessels with a carrying capacity of more than 150 tons except tour ships, extends as much as 7.5 miles offshore between **Punta de la Maya** (23°06'N., 81°29'W.) and **Cayo Piedras del Norte** (21°58'N., 81°07'W.).

4.18 Bahia de Cardenas (23°05'N., 81°10'W.), lying under the excellent NW shelter of the low, rather heavily populated Peninsula de Hicacos reviewed earlier, is a spacious but predominately shoal water bay. Its seaward entry is scattered with small, low-lying islands.

There are several deep water passages leading in through these islands from the NW and join a narrow dredged channel as depicted on the chart, to the community of Cardenas at the head of the bay.

The shallow bay opens to 9 miles in width, NW to SW and from 6 to 10 miles long W to E.

Depths—Limitations.—The entrance channel between Cayo Mono and the coral shore SW, has an initial depth of 9.1m and then decreases to 6.4 to 6.7m. The channel is well-buoyed.

The maximum draft permissible is 5.2m and the maximum length is approximately 171m.

Canal de Buba, which is about 2 miles long, will not accommodate larger vessels except at slack water. This channel, dredged to a reported depth of 7.3m through rock and sand, is also dredged in its continuation to a similar depth but through a mud bottom. The last section is paralleled to the E by a largely sunken ridge of dredged material and portions of the section are reported to have less than charted depths.

The most generally-used passage leads between Cayo Mono and a 5.8m shoal area about 1 mile to the SW of Cayo Mono. This shoal area is marked by a buoy moored about 0.2 mile WSW of the shoal, and during heavy weather by breakers.

A second passage leads between Cayo Piedras del Norte and Cayo Monito, an above-water rock about 1.5 miles to the SW. A marine reserve, best seen on the chart, has been established to the NW of Cayo Piedras del Norte. Vessels must remain clear of this area as well as the designated restricted area.

Aspect.—In the approach to Bahia de Cardenas from the W, the tall buildings of the beach resort come into view first and then the 27m high summit of the peninsula.

The light on the low reef-fringed rocky islet Cayo Piedras del Norte is then defined.

In the approach from the N, Tetas de Camarioca appears first during clear weather, followed by the summit on Peninsula de Hicacos, the two neighboring islets Cayo Piedras del Norte and Cayo Mono and then the islands farther in toward the entrance to the bay.

In the seaward approach from the E and N of Cayo Cruz del Padre, the high land of the Peninsula de Hicacos usually appears first followed by Cayo Mono, which more often than not becomes visible before the light on Cayo Piedras del Norte.



Cayo Pedras del Norte Light

Pilotage.—Pilotage is compulsory in Bahia de Cardenas and for its immediate seaward approaches.

Pilots board close S of Cayo Piedras del Norte where, if bound for the facilities at Cardenas, they must arrive at least 3 hours before sunset so as to navigate the approximately 14 miles to destination during daylight only. From the pilot's boarding point to the facilities, there is about 4 hours sailing time, including maneuvers to the Jose A. Echavarria Pier in Cardenas.

Anchorage.—There is anchorage outside of the bay for vessels awaiting a pilot, in depths of from 8.2 to 13.4m, sand over coral, in a position anywhere within a triangle formed between Cayo Mono and Cayo Piedras del Norte and extending SE to a lighted buoy identified as No. 1 that marks a charted 5.2m isolated patch.

An approximately 1 square mile area in the SE portion of the anchorage is to be avoided because of the question of depth and "bottom shift." There are deep anchorages at Cayo Diana, 9 miles from the pier, in depth of 5.6m.

Vessels can anchor in the bay about 3 miles from the pier in depths of 4.5m.

Directions.—Vessels intending to enter Bahia de Cardenas by way of the generally used passage between Cayo Mono and Cayo Piedras del Norte, approach from the NW clear of the Restricted Area, steering a course, such that the higher appearing islet Cayo Chalupa about 5.5 miles, bearing 173°, lies a little open to port.

Proceed to pass Cayo Mono abeam to port at 0.5 mile. Continue on to pass E of the 5.8m coral head and W of the sunken danger marked by Lighted Buoy No. 1.

Thereafter, alter course when lined up to enter Canal Buba, and continue to proceed to enter the canal.

Sometimes, when loaded vessels are outbound in the channel, inbound vessels with a draft no greater than 4.6m, swing wide and enter Canal Buba from the E. Inbound vessels with a similar draft are commonly kept to the W of the inner dredged channel after having passed a position about 3.5 miles SW of Cayo Diana.

4.19 Cardenas (23°02'N., 81°12'W.) (World Port Index No. 10120) is the secondmost active transshipment center in Cuba for the export of sugar. It has been reported (1995) that there is oil exploration in progress within the bay.

Cardenas is the N port in Cuba.

Depths—Limitations.—The dredged channel leading to the pier has a draft limitation of 6.1m.

Jose A. Echavarria Pier (Cardenas Pier) is 750m long, with the following draft restrictions:

Berth	Maximum Draft	
Southeast No. 1	5.75m	
Southeast No. 2	4.75m	
Northwest No. 1	6.10m	
Northwest No. 2	4.85m	

4.20 Between Bahia de Cardenas and Puerto Sagua la Grande, 60 miles E, the coast is mostly low-lying, quite swampy and largely fringed by fields of mangroves.

Fronting this shoreline is a shoal water coastal edge extending some 6 to 20 miles offshore, and rising everywhere steep-to along its seaward limit.

Although the area is considered adequately surveyed, there are few landmarks to identify with and consequently oceangoing vessels are advised to stay well off this part of the coast, particularly between Cayo Cruz del Padre and Cayo Bahia de Cadiz.

Cayo Cruz del Padre (23°16'N., 80°55'W.), about 13 miles ENE of Punta Frances, is the low-lying, mangrove-fringed, N islet off Cuba's N coast. It is fronted seaward by a dangerous, partially drying reef, which can be distinguished in calm weather by discoloration in the surrounding water, and identified in heavy weather by the waves breaking over it.

Cayo Bahia de Cadiz (23°12'N., 80°29'W.), marked by a light, a flat islet about 24 miles ESE of Cayo Cruz del Padre, is rocky along its N side and somewhat higher than other islets in the near vicinity. Bahia de Cadiz, a shoal water bay close SW of the islet, has anchorage as charted for small vessels with local knowledge in a position somewhat sheltered from predominating NE winds but open to N winds.

4.21 Puerto Sagua la Grande (22°58'N., 80°03'W.), approximately 133 miles E of Bahia de La Habana, fronts the Rio Sagua la Grande and includes all the waters within a much encumbered portion of the coastal edge extending some 13 miles between the small craft entrances, Boca de Sagua la Grande and Boca del Seron.

Cayo del Cristo Light, about 6 miles N of Rio Sagua la Grande, is the only readily identifiable landmark in the area.

Other than the light, numerous small islands, mangrove-covered, confuse the area and are taken as the coastline when in fact the coastline lies some 5 to 6 miles farther away.

There is one principal entrance to Puerto Sagua la Grande, that being Canal Boca de Maravillas, an improved channel to accommodate ocean shipping.

The canal has been dredged through sand, clay, mud, coral, and rock and leads in from the sea and then between Cayo de la Cruz and Cayo Maravillas. The channel is approximately 6 miles long, 91m wide, with a minimum depth of 7m, and is well-buoyed.

Being open NE, there is frequently a very heavy sea in Boca de Maravillas and, at such times, vessels of more than 3.7m draft may not be able to enter.

Caution.—Dredged material has been deposited on each side of the channel where it lies uncharted and is built up in the form of partially drying banks.

4.22 La Isabella (Isabela La Sagua) (22°57'N., 80°00'W.) (World Port Index No. 10130), a small community at the entrance to Rio Sagua la Grande, is the port and sugar transshipment center for Sagua la Grande, a community located about 12 miles farther upstream.

The approach to La Isabella is through the Canal Boca de Maravillas. The bottom is sandy and of coral reef, hard rock, mud and clay. The turns are not dangerous except in the narrow portions where both the current and type of bottom make them dangerous. The canal is well buoyed.

Depths—Limitations.—The Amezaga Pier on the SW side has a length of 140m with a depth alongside of 6.7m.

Cargo handled includes general, bagged, raw, and refined sugar. The NE side is out of service.

The Alfert Pier on the E side has a length of 137m, width of 9m along with drafts of 5.4m (base), 6.1m (head). Cargo handled includes general, molasses, and bagged sugar. The W side is out of service. The pier is served by a railroad spur.

The Begueristain Pier has a length of 165m, width of 9m, with a depth alongside of 4.8m. This pier is out of service due to shallowness alongside.

Pilotage.—Pilotage is compulsory. Pilots board vessels about 1.5 miles NE of Cayo del Cristo Light and then proceed into Puerto Sagua la Grande, but only during daylight hours. The pilot may be contacted on VHF channel 16.

Anchorage.—Inner anchorage No. 1 is situated about 300m NW from the berths. The maximum draft allowed is 7.3 to 7.6m depending on the vessels length. Vessels load or discharge at this anchorage by means of barges.

Anchorage No. 2 is situated close S of Cayo Paloma. The maximum draft allowed is 4.5m. Vessels load and discharge at this anchorage by means of barges, but it is chiefly used for vessels awaiting berth.

The outer anchorage is situated E of Cayo Del Christo and about 8 miles from Isabela. Vessels can safely load up to drafts of 10m with a length of 190m.

Puerto de Caibarien (22°37'N., 79°15'W.), about 46 miles ESE of Puerto Sagua la Grande, is a shoal water area, somewhat elongated, that extends from its seaward entrance near Cayo Frances to Caibarien, a well-populated community on the isolated mainland about 15 miles WSW.

The principal deep-water activities lie centered within the main anchorage, 16 miles from Caibarien for vessels up to 6.1m.

4.23 Caibarien (22°32'N., 79°28'W.) (World Port Index No. 10140) is a major sugar transshipment center having numerous facilities for the accommodation of lighters shuttling to and from the comparatively deep-water anchorage just mentioned.

Operations are carried out at Cayo Frances anchorage by lighters, but operations are suspended in bad weather. A light is displayed from Cayo Frances on Punta del Asta. At Caibarien itself, there are nine piers. These piers are used for the shipment of raw sugar in barges which are then towed to the Cayo Frances anchorages where the vessels are loaded. All the piers, with the exception of Maritima Pier which has a depth of 2.6m, have 2.1m alongside.

Pilotage.—Pilotage is compulsory. Pilots board the vessel 0.5 mile from Catalina light buoy at the entrance to Cayo Frances anchorage, and generally bring vessels into the anchorage during daylight only. Communications with the pilot are on VHF channels 13 or 16.

Anchorage.—The main anchorage at Cayo Frances is easily accessible. The bottom is of mud and sand and the Port Buoy anchorage is of stone but free of reefs. Vessels may enter or sail from the anchorage with any draft up to 10.6m.

When vessels have a draft of less than 6.1m, they must proceed to the inner anchorage (La Caldera). If more than 6.1m but less than 7.9m, they proceed to the outer anchorage (La Poza), and those over 7.9m and up to a maximum of 10m proceed to the third anchorage (Port Buoy). Vessels may enter at any time and tugs are not necessary for entering/sailing maneuvers.

Note.—Caibarien is reported inactive (1995) and the depths were less than 2m.

Old Bahama Channel

4.24 Old Bahama Channel, separating Great Bahama Bank from the N coast of Cuba, allows passage from the Atlantic via Crooked Island Passage to the Straits of Florida or Gulf of Mexico via Nicolas Channel or Santaren Channel.

See the General Remarks section at the beginning of this sector for information on weather and currents in the channel. The N side of the channel is described in Sector 2, while the S side will be described below.

An IMO-adopted Traffic Separation Scheme has been established within Old Bahama Channel, and may best be seen on the area chart. Additionally, the area between the S traffic separation line and the coast has been designated an Inshore Traffic Zone.

Between Puerto de Caibarien and Puerto de Nuevtias, about 140 miles ESE, the coast continues, largely fringed by fields of mangroves, very swampy, and low-lying in its profile.

It is fronted by a shoal water coastal margin, which for the greater part of its length, extends some 20 miles off an isolated mainland and forms the steep-to Cuban side of Old Bahama Channel, before narrowing considerably and almost disappearing off the entrance to Bahia de Nuevitas.

There are a number of lagoons formed by small islands lying off this coast, but for other than small craft that may want to venture into these lagoons, there is no interest to ocean shipping.

The SW side of Old Bahama Channel is considered quite dangerous for a distance of about 34 miles between Cayo Paredon Grande Light and Cayo Confites Light.

Vessels are advised to make good a mid-channel course and proceed with caution.

Cayo Confites is low and lies close within the outer edge of the bank, with depths of less than 200m, 4 miles N of Cayo Verde.

A reef that dries, extends 1 mile SSE from Cayo Confites and a channel 0.1 mile wide, separates the cay from a fringing reef that dries.

There are beacons on either side of the break, a red one on the N end and a green beacon on the S end. A light is shown from a tower, 20m high, standing on the N side of Cayo Confites.

It was reported that two stranded wrecks lay on the reef. A third beacon, "Confites," lies close SW of Cayo Confites in position 22°08.7'N, 77°41.7'W. This beacon marks the W (inner) side of an anchorage.

The anchorage at **Cayo Confites** (22°10'N., 77°40'W.), is the only anchorage on the S side of the Old Bahama Channel between Puerto de Isabela de Sagua and Bahia Nuevitas in which a larger vessel, over 3.7m draft, can seek shelter.

Vessels intending to enter Cayo Confites anchorage proceed to a position on the coastal edge where Cayo Verde bears 191° and Cayo Confites extremity bears 314°.

From this point a vessel steers 270° until the S extremity of Cayo Confites bears 344°. The vessel then hauls to starboard and takes heading of about 323°, and when Cayo Confites extremity bears 050°, distant 0.5 mile, they anchor in a charted depth of 6.7m.

The Cuban coast from Cayo Confites to Cayo Sabinal is marked, generally, by sandy beaches, numerous lagoons, and swamps and skirted by broken reefs. Punta Matermillos Light, about 4 miles NW of the entrance to Puerto de Nuevitas, is the principal landmark in the identification of the area.

Bahia de Nuevitas (21°32'N., 77°14'W.), about 190 miles WNW of the E extremity of the island, is an extensive landlocked bay and one of the two largest pocket bays on the entire Cuban coast (the other is Bahia de Nipe). It is entered through a narrow deep-water channel 7 miles long.

The bay is divided by a somewhat hilly and heavily scrub-covered peninsula (Peninsula del Guincho) extending 3 miles E from the SW side of the bay. Bahia Nuevitas lies SE of the Peninsula del Guincho and Bahia de Mayanabo lies NW of the peninsula.

The towns of Pastelillo and Puerto Tarafa, sub-ports of Nuevitas, lie on the SE and NW sides of the peninsula respectively. The terminal of Bufadero lies on the NE side.

The surrounding coastal terrain is low-lying, flat, and without distinguishing features except for the hills on the dividing peninsula and the nearby conical islets Cayo Ballenato Grande and Cayo Ballenato del Medio which, rising above the lowland, are visible from the sea.

An IMO-adopted Traffic Separation Scheme has been established in the waters off Bahia de Nuevitas, as may best be seen on the area chart.

Additionally, an Inshore Traffic Separation Zone has been established between the S Traffic Separation Lane and the coast.

4.25 Nuevitas (21°33'N., 77°16'W.) (World Port Index No. 10150), together with the nearby deep-water alongside berthing facilities at Pastelillo, Punta Bufadero, and Puerto Tarafa, form the port for the well-populated metropolis Camaguey, about 45 miles WSW and constitute as a whole the principal sugar transshipment center for Cuba.

Tides—Currents.—A strong tidal current reaches a velocity of 3 to 4.5 knots. It nevertheless, falls slack for a period of about 2 to 3 hours after HW or LW on the coast.

Depths—Limitations.—The entrance being between Punta Sotavento and Punta Practicos is negotiated through a series of four sharp turns.

The channel is reported to be over 9.1m deep.

In 1994, it was reported that the maximum with which vessels can enter and sail is up to a draft of 10.3m with a maximum length of 195m. It is recommended that vessels enter or depart during daylight only.

Tankers up to 14,000 dwt can use the channel without difficulty, but care is advised because of the sharp turns and speed of currents. The inner part of the entrance is obstructed by the shoal Bajo del Medio, 3 miles from the entrance.

The Tarafa Terminal consists of three concrete piers, with the following limitations:

Pier	Length	Depth alongside	Vessel limitations
Pier B			
NE side	146m	5.8-8.5m	
SE side	146m	4.3-7.6m	
Pier C		•	•
NE side	133m	7.9-9.4m	See Note 1.

Pier	Length	Depth alongside	Vessel limitations
SE side	133m	7.0-8.2m	
Pier D			
NE side	234m	8.5-10.3m	
SE side	145m	5.8-8.5m	See Note 2.

Note 1.—Maximum vessel length is 150m. Maximum vessel draft is 5.6m.

Note 2.—Vessels up to 150m long are allowed a maximum draft of 6.8m. Vessels greater than 150m long are allowed a maximum draft of 5.6m.

There are berths up to 146m long, allowing maximum drafts of 5.8 to 7.9m.

The Cement Dock, close to Punta Bufadero, has a length of 84m, with draft of 6.1m. Bulk cement is shipped by means of a pneumatic system.

The Pastelillo Pier has a length of 195m on the N side with a draft of 9.0m. It is used for sugar and general cargo. This pier is used by tankers, apart from those with naphtha. Vessels can be supplied with fuel and diesel oil at this pier.

The Bufadero Pier is constructed of concrete and is used by tanker vessels up to 182m in length for molasses and fuel oil. Only the S side of this pier is used.

Pilotage.—Pilotage is compulsory. Pilots will board vessels at Punta Practicos, about 1 mile N of No. 1 buoy, the area which marks the port entrance.

If there is inclement weather, the pilot will board between Punta Sotavento and Punta Saleadores. Not less than 24 hours notice should be given when ordering a pilot.

See also the General Remarks topic at the beginning of this sector.

Anchorage.—There are ample anchorage zones close to the place of operations where vessels have a good swing area. Anchorages are used as waiting places when piers are occupied, although occasionally loading or discharging operations are performed.

The Botijuela anchorage, 0.6 mile SE of Cayo Ballenato Grande, is the largest. The area offers depths of 11 to 14m with hard mud bottom. The anchorage can accomodate as many as 15 vessels of 170m loa.

The anchorage at Tarafa is found 0.4 mile N of the Tarafa Pier complex in 6m of water. It is limited to one vessel at a time.

Caution.—Many dangers are found in the entrance channel. Vessels entering or leaving port must remain within the marked channel. Only small craft may venture outside the channel limits.

Puerto de Nuevitas to Cabo Maisi

4.26 The coast between Puerto de Nuevitas and Cabo Maisi fronts directly on the open sea without any other significant obstruction than a narrow, shoal water coastal margin on either side of Puerto Cayo Moa.

In identifying this part of the coast for a distance of about 189 miles, there are a number of natural landmarks, but in

particular, Silla de Gibara, in the W, and Loma El Yunque, in the E, are excellent references.

The coastline is indented by numerous inlets and pocket bays where vessels find anchorage well-sheltered from prevailing winds, but SE of Punta Guarico these conditions do not exist, as the anchorages are not well-sheltered.

Bahia de Manati (21°24′N., 76°48′W.), about 21 miles SE of Puerto de Nuevitas and 165 miles WNW of Cabo Maisi, is a typical pocket bay having a deep-water, straight and quite lengthy entrance channel that leads into a largely shoal water basin fringed, almost without exception, by fields of mangroves.

The entrance channel, with facilities at Puerto Manati, is of interest to ocean shipping; the inner bay is not.

4.27 Puerto Manati (21°22'N., 76°50'W.), a small community on the W side of Bahia de Manati entrance channel, is a sub-port of Puerto Padre. Sugar is the principal commodity handled at Puerto Manati. It is reported (1995) to be inactive.

Depths—Limitations.—The entrance channel is narrow and deep and averages depths from 15.2 to 18.2m, with the exception of a pass near Carenero Shoal, where the depth is 11.5m at low tide. Its bottom is irregular, being partly sandy.

Vessels sailing to this port are limited in draft as follows:

Length	Maximum draft	
Up to 152m	7.9m	
152 to 160m	6.1m	
Over 160m	5.1m	

Manati Wharf is an L-shaped pier, 141m long. The pier has an E and W side, but only the E side is used; a maximum draft of 9.4m can be accommodated. It was reported (1995) to be in a state of disrepair. The port is used for exports of sugar from the Argelia Libre sugar mill.

Aspect.—The surrounding terrain is low and there are no distinguishing features. The best landmarks are considered to be Bahia de Manati Light,reported visible by day at a distance of 8 miles, and a gray brick chimney standing in the port.

Easily distinguishable are the heavily forested hill Loma Tabaco, 2 miles W of Puerto Manati, and Cerro Dumanuecos, a 129m high conspicuous sugarloaf hill which is about 11 miles SW of Bahia de Manati entrance.

Pilotage.—Pilotage is compulsory. Pilot boards about 1 mile outside the seaward entrance to Bahia de Manati and usually proceeds to the destination during daylight hours only. Vessels should provide ETA a minimum of 24 hours in advance.

It is not necessary to await slack water for entry or sailing, but considering the large tonnage of vessels presently entering the port for topping off, if there is a strong current pilots must wait until the current loses some of its velocity in order to avoid accidents.

See also the General Remarks section at the beginning of this sector for additional pilotage information.

Anchorage.—Anchorage for vessels awaiting berthing is available 0.1 mile SE of the pier near Punta Apostoles. The bottom is mud and sand, with good holding ground.

4.28 Bahia de Puerto Padre (21°14'N., 76°32'W.), about 17 miles ESE of Bahia de Manati and 149 miles WNW of Cabo Maisi, Cuba's E extremity, is divided into two landlocked bays, well-sheltered and having a common entrance from the sea.

Punta Mastelero Light standing at the seaward entrance to Puerto Padre, is reported to be visible at a distance of 6 miles, and is the principal landmark in identifying the area.

The entrance itself is reported radar conspicuous at 5 miles. Other than these marks, the surrounding terrain is low-lying and largely without distinguishing natural features.

4.29 Puerto Padre (21°12'N., 76°36'W.) (World Port Index No. 10160), the community at the head of Bahia de Puerto Padre, having its principal maritime activities centered at Cayo Juan Claro, is situated in one of the richest and most important sugar cane zones in Cuba.

Depths—Limitations.—The entry is funnel-shaped at its mouth. It has three turns, but the one to take into consideration when maneuvering vessels over 160m is the "Carenero" turn, although vessels with a length of 172m have entered this port.

The entrance is marked by No. 1 and 2 buoys E of Punta Mastelero; the length of the channel is about 2 miles. The maximum width of the channel is 219m with a minimum width of 137m. The depth on the bar is 8.2m. The bottom is rocky in the entrance channel and muddy in the bay.

Owing to the current in the channel, vessels must await slack water for entering and departing. The largest vessel handled had a maximum length of 170m. Vessels up to 168m long can enter or leave at all times and have a maximum draft of 7.6m. Vessels over 168m long can have a maximum draft of 7.3m and must enter or leave in daylight.

Current set and velocity outside the entrance is largely dependent on local conditions, while in the bay area of the entrance it is negligible.

Loading and or discharging operations are carried out at Puerto Carupano (Cayo Juan Claro), approximately 3 miles from Puerto Padre.

Pier No. 1 has a length of 159m, with a depth of 8.2m. Cargo handled includes import and export of general cargo.

Pier No. 2 has a length of 82m, with a depth of 9.1m. Cargo handled includes the export of molasses and alcohol and the import of fuel oil.

Pier No. 3 has a length of 183m, with a depth alongside of 9.1m. Cargo handled at this pier is the export of raw sugar by mechanical means. Bunkers are not available.

Pilotage.—Pilotage is compulsory. Vessels making their approach, steer for Punta Mastelero Light on a heading of 190° and board pilots during calm weather not less than 1 mile seaward of Punta Mastelero. Vessels should send ETA at least 24 hours prior to arrival and include a request for a vessel movement permit.

Anchorage.—Anchorage is available W of Cayo Juan Claro about 0.6 mile SW of Punta La Morena in 7m of water with mud and shell bottom.

4.30 Puerto Gibara (21°06'N., 76°07'W.), about 25 miles ESE of Puerto Padre, and 124 miles WNW of Cabo Maisi, is a small and mostly shoal water bay.

Silla de Gibara (21°02'N., 76°05'W.), an outstanding feature mentioned earlier in the text, lies about 6 miles SSE of the Puerto Gibara entrance. It appears as a saddle-shaped hill having a rocky gray summit rising to 307m.

Cerro Colorado and Cerro Yabazon, 254m and 246m high, respectively, are two conspicuous hills lying within miles WSW of Silla de Gibara.

Lomas de Cupeicillo are a series of forested hills and conspicuous ridges, rising from 150 to 245m, and extend 10 miles to the W of Puerto Gibara.

4.31 Gibara (21°07'N., 76°08'W.) (World Port Index No. 10180) is a small community on a gentle slope on the W side of Puerto Gibara.

Tides—Currents.—Tides and currents are negligible, but the discharge from the rivers Rio Cacoyuquin and Rio Gibara after heavy rains can sometimes cause a current to set N along the side of the entrance at about 0.2 knot.

Depths—Limitations.—The pier has alongside depths of 4.3m. A light is exhibited at Punta Rasa about 3 miles N of Gibara.

Pilotage.—Pilotage is compulsory. Pilots board about 3 miles seaward of Puerto Gibara entrance during calm weather, and usually enter by day only.

Anchorage.—Anchorage can be taken either on the E side of the entrance, where they will lie almost broadside to a swell that sets in when the predominating NE wind is blowing, or on the W side in 5.5 to 7.3m which lies with the bow heading by the wind and swell.

Vessels are unable to berth alongside the pier with winds from the S and are troubled in either anchorage with winds from the N.

4.32 Bahia de Bariay (21°05'N., 76°01'W.) is entered between Punta La Mula (Desiree) and Cayo Bariay 0.7 mile SW. It is a small shoal water bay providing temporary anchorage for vessels with local knowledge in about 7m, white sand and coral, in a position close inshore off the second sandy beach S of Punta La Mula. It is fully open to the N and during the winter months it is unsafe.

Bahia de Jururu, close W of Bahia de Bariay, is completely sheltered, entered through a narrow channel blocked by a bar, and only suitable for small craft.

Bahia Vita (21°05'N., 75°57'W.) is another bay of the pocket bay series along the N Cuban coast. It is located about 9 miles E of Puerto Gibara and 115 miles WNW of the E extremity of the island of Cuba.

A narrow, intricate and quite deep channel leads to deep water alongside a berthing facility at Puerto Vita. Because of the largely flat terrain surrounding this area, vessels at Puerto Vita are discernible from sea.

4.33 Puerto Vita (21°05'N., 75°57'W.) (World Port Index No. 10190) is a sub-port of Gibara in Oriente Province. Vita operates as a small sugar transshipment center at the head of Bahia Vita.

Depths—Limitations.—Vita Pier, on its N side, has a length of 150m, with a depth of 7.9m. Facilities exist at the wharf for coastal tankers.

Vessels over 130m in length require the assistance of a tug.

Aspect.—Central Rafael Friere (Santa Lucia) sugar mill, about 4 miles SSW of Bahia Vita entrance, is an excellent landmark. It is a tall white chimney that is considered to be the best mark, but an isolated hill rising to 121m, with its summit having a conspicuous out-cropping of white rock and appearing as a white washed vertical stripe, is also an excellent aid to the mariner.

It is reported that the summit is visible 10 to 12 miles seaward. At night, the light at Punta Barlovento, on the E side of the port entrance, can be seen from as far as 10 miles.

Pilotage.—Pilotage is compulsory. The pilot boards 3 miles from the entrance channel. Entry and departure is during daylight hours only.

Anchorage.—Vita anchorage is located about 190m NE of the pier. It is recommended only to medium sized vessels because of the insufficient swinging area.

Directions.—Strong N winds can make entry difficult. Entry through the bay is through a narrow channel.

Vessels, in making their approach to Bahia Vita from the W, steer for the 121m high hill close E of the bay and proceed to the clear cut seaward end of the entrance channel.

Considered somewhat easier, an alternate approach is to steer for the conspicuous Central Rafael Freire sugar mill chimney on a heading of 180° and upon closing the coast, haul to port and proceed to destination.

4.34 Bahia de Naranjo (21°06'N., 75°53'W.), about 5 miles E of Bahia Vita, is another small pocket bay, but there are no facilities and no pilots. The bay provides well-sheltered anchorage from all winds for the medium-sized vessel. A well-buoyed deep-water fairway leads to the small boat facilities in the SE corner of the bay. Deep water anchorages can be found in the W half of the bay.

The W side of Bahia de Naranjo is marked by a high, flattened wooded hill rising to 105m and on the E side there is an isolated sugarloaf hill. At about 3 miles SE of the entrance, a high flat-topped ridge having a white, precipitous W slope, will come into view.

Bahia de Naranjo entrance itself can be distinguished by the conspicuous red scarp at Punta Barlovento, the entrance, and a large hotel immediately to the E.

The drying coastal reef NNE of Punta Barlovento extends almost 0.7 mile offshore.

Vessels making their approach, steer for Bahia de Naranjo entrance on a heading no greater than 175°, so as to pass W of the sunken dangers extending N from Punta Barlovento, and then proceed in mid-channel to the destination.

Anchorage.—Vessels can anchor in depths of 16.5m, coral, in a position close S of Punta Barlovento or, proceeding farther into the bay and to the SW, in 11 to 14.6m in a position with Maesta de Naranjo's center area bearing 236°. With this latter bearing, Maesta de Naranjo has a conical appearance.

Bahia Sama (21°07'N., 75°46'W.), about 11 miles to the E of Bahia Vita, is a shoal water inlet, limited by an obstructed entrance, allowing vessels drawing no more than 4.4m to enter. The mean tidal range is about 0.6m.

Pan de Sama, a rounded hill about 4 miles SSW of the Bahia Sama, stands out well against a wooded flat to undulating terrain, and is a good landmark.

4.35 Sama (21°07'N., 75°46'W.) (World Port Index No. 10200) is located on the W side of the bay. Sama is the site of a small community engaged in tourist-related activities. The entire bay has been reported (1995) shoaled in. Sama no longer has any commercial (non-tourist) activities.

Aspect.—From Bahia Sama to Bahia de Banes, which is about 15 miles distant, the coastline protrudes considerably to the E. Sandy beaches, fronted generally by a margin of sunken reefs, are the prevalent features along this coast. The interior is heavily wooded.

Anchorage.—The anchorage off the boating dock has a depth of 3m. Further S, the bay shoals to a meter. The anchorage is open to winds from the N.

Cabo Lucrecia (Punta Lucrecia) (21°04′N., 75°37′W.) is one of the principal landfalls for vessels proceeding along the N coast of Cuba. For a mile or two on each side of Cabo Lucrecia, the coast has a low profile and consists of a white, low scarp partially interrupted by sandy beaches. Close inland, trees and mangrove cover the terrain.

A light is shown from a prominent stone tower, 37m high, standing on the point. A stone dwelling stands at the rear of the light tower.

An IMO-adopted Traffic Separation Scheme has been established in the waters off Cabo Lucrecia and may best be seen on the chart.

Additionally, an Inshore Traffic Zone has been established between the S Traffic Separation Lane and the coast.

Bahia de Banes (20°54'N., 75°43'W.) is a deep-water, almost totally landlocked, and quite well-sheltered pocket bay. The entrance channel is both narrow and tortuous. The entrance itself is very hard to identify until quite close.

Bahia de Banes is difficult to recognize from the sea. From a position about 12 miles to the W, there are three grouped hills, useful in identification in that they are equal in elevation, serrated in appearance, steep-to on the NE side, and sloping on the SW. Close NE of these hills is a conspicuous rounded or somewhat saddle-shaped hill.

4.36 Puerto Banes (20°55'N., 75°42'W.) (World Port Index No. 10210), a community on Bahia de Banes N side, is the port for Banes, a community 3 miles to the N.

Depths—Limitations.—Boca de la Bahia de Banes (Canal El Canon) the entrance channel for Bahia de Banes is narrow, comprised of a corkscrew-shaped gorge with depths of 18.4m. The minimum depth in the channel is 9.1m over a bottom of rock and coral about 0.7 mile from Fuerte Point. Vessels should enter on daytime slack water only. Vessels over 500 dwt should engage a tug for the gorge transit.

Maximum length of a vessel that can transit the gorge is 106m. Shoals that exist in the channel are plainly distinguished and also marked.

In the approach, Bahia de Banes Light is useful. The light is situated about 0.2 mile S of Fuerte Point, but it should not be confused by day with the light at the nearby entrance to Bahia de Nipe. At the extremity of Punta Penasco the N side of the entrance, there is a masonry house which is visible up to 2 or 3 miles away.

Not only are the sharp hairpin turns of the canal crucial, but its seaward end is open to the prevailing NE winds while its interior length is subject to tidal current which can attain a velocity of 6 knots. Slack water occurs 40 to 45 minutes after HW and LW along this side of the coast.

At Puerto Banes, Nicaragua Pier (formerly Banes Pier) has a maximum length allowed of 106m, draft of 5.1m at the base and 5.7m at the head. The pier is in very bad condition and is reported out of service.

At Macabi, 2.5 miles across the bay, there is a wooden L-shaped pier 76m long with a least depth of 5.8m alongside. Vessels always dock port side-to. The pier is in ruins and is unusable.

Pilotage.—Pilotage is compulsory. Vessels should embark the pilot at 20°53'N, 75°39'W, 1 mile NE of Bahia de Banes Lighthouse. The pilot station is located at Embarcadero de Banes (Puerto Banes). Vessel ETA should be passed in advance.

Signals.—Traffic signals for vessels entering the bay are displayed on Boca de la Bahia de Banes seaward entrance S side.

Anchorage.—Macabi Anchorage is located 0.2 mile SSW of Nicaragua Pier. The maximum draft is 9.4m with a maximum length of 109m. The bottom is soft mud, but anchors hold well.

Another anchorage is found 0.2 mile NW of Cayo Iguana in 9-10m, mud bottom.

Additional anchorage is located 0.3 mile N of Cayo La Raya in 6-7m mud and sand bottom and good holding ground.

4.37 Bahia de Nipe (20°47'N., 75°42'W.) is entered about 8 miles SE of Bahia de Banes. It is one of the largest pocket bays on the entire Cuban coast. Another is Puerto de Nuevitas.

The bay is extensive, well-sheltered, quite deep, almost landlocked, and entered by means of a very deep and easy to transit channel. It is influenced by strong tidal currents. Slack water occurs some 40 to 45 minutes after HW and LW along the coast.

Nipe Bay is suitable for large vessels with a maximum draft up to 22.8m and a length of up to 400m. The principal destinations within the bay consist of the ports of Saetia, Felton, Preston, and Antilla. Bahia de Nipe entrance, from the E, appears as a steep-sided notch, while from the N, it cannot be distinguished at any great distance. Remarkable is the Rio Mayari which, emptying into Bahia de Nipe, cuts a notch into Sierra de Cristal and is visible well to sea. Closer into the entrance, breakers can be distinguished first and then the structures for the lighted range at Ensenada del Cristo.

Anchorage.—Anchorage is available at several locations around the bay, for which the local authorities and the pilot should be consulted.

About nine vessels can be accommodated at the Point Salinas anchorage, with maximum drafts of 9.1 to 17m and lengths up to 170m.

Corojal anchorage 0.4 mile W of the pier can accommodate two vessels with drafts of 6m and length of 170m.

Antilla Anchorage No. 2, 0.4 mile SE of the pier, can accommodate two vessels with a draft of 7.1m and a length of 170m.

4.38 Antilla (20°50'N., 75°44'W.) (World Port Index No. 10230) is the principal shipping center for Bahia de Nipe and is

situated on the NW shore of the bay. Sugar is the main cargo handled and vessels berth alongside anytime.

Depths—Limitations.—There is safe approach and no turns other than steering so as to avoid the spit extending from Punta Ramon, and compensating for a possible S set onto sunken dangers about 2 miles inside the bay. The width of the approach is 0.7 mile via a buoyed channel with mud bottom.

Antilla will accept cargo vessels up to 169m in length, and tank vessels up to 185m in length. The maximum draft for vessels calling at the port is 6.4m forward and 7m aft.

There are three berths available at Antilla. The Coast Wharf is used for discharging oil and cereal and loading molasses. It has a length of 136m with a depth of 6.1m. Arrival and departure is undertaken in daylight hours only at No. 3 pier.

Berth No. 4 is for loading of bagged raw sugar and molasses and unloading of general cargo.

The N side can accommodate a draft of 4.0m at its base and 5.8m at the head with a length of 170m. Silting is an ongoing problem.

The S side has a depth of 6.1m at the base and 6.7m at the head with a length of 170m.

Pilotage.—The pilot station is located in Antilla. Upon receipt of a vessel's ETA, Mambisas Antilla Agency immediately informs the pilots who depart to Saetia to await to board the vessel at the embarkation point in 20°47'46"N, 75°32'15"W, which is located 1 mile NW of Punta Mayari. A wreck lies close SE of Punta Mayari on the reefs.

4.39 Guatemala (Preston) (20°46'N., 75°39'W.) (World Port Index No. 10240), about 7.5 miles WSW of Punta Mayari, is a sugar transshipment center and sub-port of Antilla. The Rio Mayari, which discharges near the berthing facility, causes a great deal of silting and therefore dredging is necessary to maintain the required depths. The pier has three berths and a length of 199m. Vessels may load to a draft of 3.3m forward and 6.0m aft. The pier was reported (1992) to be in ruins.

Felton (20°45′N., 75°36′W.) (World Port Index No. 10250) is a small community on Bahia de Cajimaya's W side which is located about 1 mile E of the mouth of the Rio Mayari. Felton is a sub-port of Antilla and is an iron ore transshipment center.

Vessels are urged to contact the local authorities for current information on the berths before docking.

The berth here is reported to be able to accept vessels up to 169m in length with a maximum draft of 8.2m. One vessel at a time can be handled.

Saetia (20°47'N., 75°34'W.), about 3 miles WSW of Punta Mayari, is the site of a small banana plantation. It is fronted by a berthing facility having an alongside depth of 10.4m.

Bahia de Levisa (20°43'N., 75°31'W.), entered about 5 miles SW of Bahia de Nipe, is a small, well-sheltered, but obstructed and almost totally landlocked pocket bay.

It has been reported that it is a prohibited zone. Special permission is needed to enter.

Accessible by a very narrow, intricate, and quite deep entrance channel, Nicaro, on Lengua de Pajaro, is the center of maritime activity in Bahia de Levisa.

4.40 Nicaro (20°43'N., 75°33'W.) (World Port Index No. 10260), a sub-port to Antilla in Bahia de Nipe, is a transshipment center for sugar and nickel ore in bulk.

Depths—Limitations.—Nicaro Pier, on the N side, has a length of 156m, with a depth alongside of 9.1m; vessels up to 145m long can be accommodated.

Cargo handled includes general cargo, fuel oil, diesel oil, and liquid ammonia. The S side has a length of 156m, with depths alongside of 6.7m at its base and 9.1m at its head; vessels up to 104m in length can be accommodated.

Cargo handled includes anthracite coal, nickel, and general cargo. Bunkers are generally available, but arrangements should be made 48 hours in advance.

The entrance to Nicaro is risky for vessels over 107m due to the narrowness and sharp turns, some of nearly 90°.

Vessels of this length, up to a maximum allowed of 156m, require tug assistance and all vessels should enter or sail during daylight hours.

Pilotage.—Pilotage is compulsory. The pilot station is located at Saetia in Nipe Bay. Vessels enter only at slack water and during daylight and wait at the pilot station.

Anchorage.—Anchorage No. 1 is located about 0.6 mile SW of Point Gorda with 11 to 13m water, mud bottom. Anchorage No. 2 is located about 0.5 mile NE of the pier head, in depths of 10 to 11m, mud and sand bottom.

4.41 Bahia de Sagua de Tanamo (Puerto Tanamo) is located about 9.5 miles ESE of Bahia de Levisa and is entered directly from the sea through a deep, but intricate channel.

It has been reported (1995) that a prohibited zone exists. Special permission is needed to enter.

The surrounding terrain is hilly and rises inland in a succession of uneven hills to Sierra del Cristal, a conspicuous mountain range some 13 miles to the S.

Bahia de Sagua de Tanamo is concealed from the sea and is difficult to identify from well offshore. The entrance is similarly difficult to identify and the light structure situated on the low-lying E entrance point cannot be easily seen by day at a distance greater than 3 miles.

Boca de Tanamo, the entrance channel to Bahia de Sagua de Tanamo, is a short, quite deep, but intricate passage. Transit is complex because of a difficult near right angle turn, a fairway that narrows to a navigable width of less than 0.1 mile opposite Punta Gitano (West Point), and a tidal current setting fair through the channel, but at a velocity of 3 knots or better.

If proceeding to the anchorage, the limiting dimensions are considered to be a length of 152m with a draft of 8.5m.

4.42 Puerto de Sagua de Tanamo (20°42'N., 75°19'W.) (World Port Index No. 10270) is suitable for vessels of deep draft. Sugar and molasses are transshipped from Puerto Tanamo.

Depths—Limitations.—The entrance channel is shaped like an "S," with rocky and muddy bottom in many parts. There are near 90° turns, narrow and dangerous parts. Use caution in the approaches.

The principal berthing facility in Bahia de Sagua is Punta Gorda pier 20°41'N, 75°20'W. The N side has a length of 157m with depths alongside of 6.4 to 6.7m.

The S side also has a length of 157m with depths alongside of 6.4 to 7.3m. Cargo handled includes the export of raw sugar, refined sugar, and molasses.

The largest vessel to enter the port had a maximum length of 180m with a maximum draft of 10.6m. Vessels over 120m in length require the assistance of a tugboat.

Pilotage.—Pilotage is compulsory. Pilots board about one mile seaward of Boca de Tanamo and enter by day during near slack water only. The time of entry is critical because of the strong tidal currents mentioned earlier.

Tugs are normally not available, but arrangements for their service can be made through authorities at Cayo Mambi

Anchorage. —Anchorage is available as charted about 0.8 mile ENE of Punta Gorda in 12 to 14m water, mud bottom. The holding ground is good and as many as six vessels may be accommodated.

4.43 Bahia Cebollas (Puerto Cebollas), located about 10 miles E of Bahia de Sagua de Tanama, is a smaller, multibranched inlet composed of intricate deep-water passages in the interior with access from a narrow, unmarked deep-water channel from the sea. Though quite deep, Bahia Cebollas is suitable only for small craft.

Bahia de Cananova (Puerto de Cananova), about 3 miles E of Bahia Cebollas, is an inlet which, although quite shoal throughout its inner reaches, is fronted by an unmarked openended deep-water pool allowing vessels the opportunity to occasionally load bananas, lightered out from several plantations in the area. It is reported that a local pilot is available.

Bahia de Yaguaneque Puerto de Yaguaneque), close E of Bahia de Cananova, is a small, largely shoal water pocket bay which is entered from the sea by a narrow unmarked deepwater cut.

It will accommodate only small craft with local knowledge. The approaches to all three bays are dangerous with an onshore N wind.

The coast on either side of Puerto Cayo Moa, for a distance of about 20 miles between Bahia de Yaguaneque and the low-lying point **Punta Guarico** (20°37'N., 74°44'W.), is fronted throughout by a coastal shelf that extends about 2 miles offshore to an unbroken barrier of drying reefs and sand flats indicated by breakers.

There is a shoal water lagoon which occupies a good deal of the area between the outer dangers and the mainland. From the shoreline of the mainland, the terrain rises rapidly to lofty interior mountains Cuchillas de Toa (Cuchillas de Toar).

4.44 Puerto Cayo Moa (20°41'N., 74°52'W.) and environs is a deep-water area which, located S of Cayo Moa Grande, lies inshore of and somewhat sheltered by the outer barrier of the coastal margin.

It is accessible through an extremely deep cut that, passes E of the low-lying mangrove-covered islet Cayo Moa Grande, and leads to deep-water facilities at Ensenada Yaguasey.

Depths—Limitations.—The entrance channel, Quebrado de Moa, is 0.8 mile long, 0.1 to 0.3 mile wide and is quite deep. It is almost straight with two very slight turns. Entry or departure is during daylight only. A lighted range marks the entrance.

The channel leads to a basin containing mineral loading facilities. The pier can accommodate vessels with a maximum draft of 12.2m.

Cargoes handled include import of bulk sulfur and general cargo and export of nickel and cobalt concentrate.

Vessels are urged to consult the local authorities for the latest information before planning a voyage here.

An offshore mooring berth, with three mooring buoys, is located 1.2 miles E of Punta Yaguasey from which a submarine pipeline extends SW to the shore at Punta la Fabrica.

Pilotage.—Pilotage is compulsory. See also the General Remarks section at the beginning of this sector. Pilots embark 2 miles NNE of the entrance.

Anchorage.—Available is available about 1 mile ENE of Punta Yaguasey in 14 to 16m of water, mud and sand bottom.

4.45 Bahia de Yamaniquey (20°34'N., 74°43'W.) is a subport of Baracoa located 3 miles S of Punta Guarico. The bay is approached through breaks in the reef. The bay is suitable for small craft only and the entrance is dangerous, except in very calm weather. Vessels proceeding to Yamaniquey must first proceed to Barocoa where a pilot will be boarded.

Bahia de Taco (20°31'N., 74°40'W.) is a miniature pocket bay and anchorage for small vessels with local knowledge. A short unmarked dog-legged channel, with the shore banks on either side steep-to, has a fairway with depths of 9m.

The sea breaks with considerable force against the rocky coast on the W side of the entrance, and tends to obscure it, thus making it all the more difficult to enter Bahia de Taco. In making an approach, vessels steer for the conspicuous S extremity of **Punta Sotavento** (20°32'N., 74°40'W.), on a heading of 240° and thereafter, proceed in mid-channel to the anchorage.

Bahia Navas (Puerto Navas), 10.5 miles SE of Punta Guarico, is a very small, easily entered pocket bay, having a straightway, deep-water entrance leading to a good shelter against prevailing winds. The bay is open to the N. The entrance has depths of more than 18.3m and is 61m in width.

Bahia de Maravi (Puerto de Maravi), 15 miles SE of Punta Guarico, is a deep-water inlet having anchorage available, but only secure during favorable weather conditions since the inlet is open to prevailing winds.

A power line, with an approximate clearance of 20m, spans the entrance.

Bahia de Baracoa (20°21'N., 74°30'W.), located about 21 miles WNW of Cabo Maisi, is a very small but relatively deepwater bay open to the E and accessible directly from the open sea.

The surrounding terrain is hilly and heavily scrub covered. Bahia Miel, a deep-water cove, is backed inland by a somewhat flat, broad river valley leading to high interior hills.

4.46 Baracoa (20°21'N., 74°30'W.) (World Port Index No. 10300), one of the oldest communities in Cuba, lies on the E

side of Bahia de Baracoa where it is a sub-port of Moa and Punta Gorda and serves as a transshipment center for bananas, coffee and coconuts. It is principally used by coastal traffic.

Depths—Limitations.—The pier is in the SE corner of the bay with depths alongside of 3m.

Aspect.—Loma El Yunque, about four miles to the W, is considered the best landmark in the identification of Bahia de Baracoa in that it is a conspicuous steep-sided flat-topped high hill, rising to 589m, which, with clear visibility, can be seen for 40 miles, particularly from the NE.

Tetas de Santa Teresa, two hills about 4 miles SSE of Bahia de Baracoa, and Loma Majayara, close SE of Bahia Miel, are three conspicuous hills, remarkable at a distance of 24 miles with clear visibility.

Pilotage.—Pilotage is compulsory. The pilot boards 2 miles in front of the port of Moa. The entrance channel is straight. Vessels up to 120m long and a 8m draft may enter the channel, but only in daylight hours.

Anchorage.—Bahia de Baracoa has anchorage in 7.3 to 9m, mud and sand, close to the town, to the W of the beached hulk.

Bahia Miel has anchorage somewhat sheltered from E winds in 9.2m, sand, in a position about 0.2 mile SW of Punta Playuela. Vessels frequently lie here so they may communicate with Baracoa without entering the bay.

Caution.—Caution is advised when using this anchorage as it is open to a heavy swell sent in by prevailing winds, particularly during winter when N and NE winds can become strong.

4.47 The coast, for a distance of about 22 miles between Bahia de Baracoa and Punta Maisi, alternates with flat or sloping grasslands and high heavily forested hills.

Rio Yumuri, a river with its entrance about midway along the coast, reaches the sea through a spectacular steep-sided gorge cut into marine terraces that encompass much of the E extremity of Cuba.

Bahia de Mata (Puerto Mata) (20°18'N., 74°23'W.), entered between Punta de Mata and Punta Sotavento, 0.3 mile NW, will accommodate only small vessels not exceeding 91m in length or a draft not exceeding 4.6m.

It has been reported (1995) that there are no longer mooring buoys, and there is no commercial activity.

It is the only anchorage of any importance with a straightway deep-water entrance between Baracoa and Punta Maisi.

Small vessels with knowledge of the area enter and commonly drop anchor when abeam Punta Cuartel, then, swinging counterclockwise through W, moor with the bow heading seaward.

The anchorage is not well-sheltered, particularly during the winter when a heavy sea can set in.